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[APPARATUS FOR GROWING STOICHIOMETRIC LITHIUM NIOBATE AND LITHIUM TANTALATE SINGLE CRYSTALS AND METHOD OF GROWING THE SAME]

Abstract

A method for growing stoichiometric lithium niobate and lithium tantalate single crystals is provided. A crystal growing apparatus that includes a long crucible with a separation member therein is used. A solid feed material is quenched from a molten state, solidified in batches or sintered before charged in the long crucible to obtain substantially stoichiometric solids. The separation member divides the long crucible into a melting zone and a feeding zone located under the melting zone, and it could effectively prevent bubble formation in the growing crystal. The stoichiometry of the axial and radial composition can be well controlled, and the control of the diameter of the crystal body is easily achieved as well.